

TS5MM-E

TEST SET, RADAR

1. GENERAL. This procurement requires a portable, X-band radar test set.

2. CLASSIFICATION. Type II, Class 5, Style E, and Color R in accordance with MIL-T-28800 for shipboard applications.

3. OPERATIONAL REQUIREMENTS. The equipment shall test radar transmitters and receivers within the minimum specifications identified below throughout the frequency range of 8.5 to 9.6 GHz.

3.1 Radar transmitters. As a minimum, the equipment shall measure and display transmitter frequency, peak power, cw power, pulse width, and pulse repetition frequency.

3.1.1 Transmitter frequency.

3.1.1.1 Frequency range. 8.5 to 9.6 GHz.

3.1.1.2 Frequency accuracy. ± 4 MHz.

3.1.1.3 Frequency resolution. 10 MHz.

3.1.2 Transmitter power.

3.1.2.1 Peak pulse power. 0 dBm to 65 dBm.

3.1.2.2 CW power. 0 dBm to 30 dBm.

3.1.2.3 Power accuracy. ± 2 dB.

3.1.2.4 Display resolution. 0.2 dB.

3.1.3 Transmitter pulse characteristics.

3.1.3.1 Pulse width. 0.1 to 6 μ s. Accuracy: ± 0.05 μ s.

3.1.3.2 Pulse repetition frequency. 300 to 15,000 pps. Accuracy: ± 1 pps.

3.2 Radar receivers. The equipment shall measure and indicate radar receiver minimum discernible signal (MDS) by providing an amplitude-variable echo pulse to the receiver-under-test.

3.2.1 MDS display range. 0 to -85 dBm.

3.2.2 MDS accuracy. ± 2 dB.

3.2.3 MDS resolution. 0.1 dB.

3.3 Trigger sources. The equipment shall be triggerable both from the pulsed RF output of the radar-under-test and from an external trigger pulse. The radar test set shall allow the operator to adjust the delay between the trigger and the echo pulse over the range of 10 μ s to 1 ms to simulate range to target.

3.3.1 RF trigger. The test set shall trigger from pulsed RF signals as defined in paragraphs 3.1.1 through 3.1.3 for radar transmitters.

3.3.2 External pulse trigger.

3.3.2.1 Pulse trigger range. -40 to 40V into 50 ohms.

3.3.2.2 Pulse trigger width. 0.2 to 3 us.

3.3.2.3 Pulse trigger frequency. 1200 to 3500 pps.

3.4 Connectors. N(f). BNC(f) is allowed for pulse trigger input.

3.5 Impedance. 50 ohms nominal.

4. GENERAL REQUIREMENTS.

4.1 Power source. MIL-T-28800 nominal power source requirements are invoked. Maximum power consumption: 225W.

4.2 Weight. 20 kg (44 lb) maximum.

4.3 Lithium batteries. Per MIL-T-28800, lithium batteries are prohibited without prior authorization. Requests for approving the use of lithium batteries, including those encapsulated in integrated circuits, shall be submitted to the procuring activity at the time of submission of proposals. Approval shall apply only to the specific model proposed.

4.4 Remote operation. A digital interface shall be provided in accordance with MIL-T-28800.